

# **Winning Hearts and Minds: Stories from the Front**

## **Getting Government to Adopt Information Technology to Support Operational Goals**

Kevin B Kreitman, PhD,  
The Aerospace Corporation

# Thesis

- **The technology exists today to do 99% of what we want to do.**
  - **Doesn't mean we couldn't do it better, faster, more sophisticated...**
  - **We are radically underutilizing current mature information technology in government and military**
- **Success and failure of technology adoption has nothing to do with technology readiness.**
  - **We have stories from 1996-present about successes and failures.**
  - **In spite of the maturing of technology over this period, success in adoption has not kept pace with technology maturity.** (We're not failing to adopt because tech is untested or immature.)

# Theory: The Equation for Success

$$(L_v + T_c) + N + CTC + !BAU = S$$

Where:

**L<sub>v</sub>**: Leadership (with vision)

**T<sub>c</sub>**: Topcover

**N**: Necessity or demand

**CTC**: Current Technology Competence

**!BAU**: NOT Business as Usual

**S**: Success

- **OR:**
- **If [(L<sub>v</sub>, T<sub>c</sub>, N, CTC) AND !BAU] Then SUCCESS**
- **Else FAILURE**

# Leadership (visionary) + topcover

- **Strong leader, willing to take personal career risks**
  - **More interested in ops results than career advancement**
- **Has vision and belief that IT can make it better**
- **Uses knowledge of existing commercial examples to inform his/her understanding of what is possible**
- **Has topcover to do what they feel needs to be done—at least long enough to do it.**

***“You can always tell the pioneers by the arrows in their backs...”***

***“Grab them by the \*\*\* and their hearts and minds will follow...”***

# Necessity

- **Driving operational need that has material consequences**
  - Warfighting need
  - Critical law enforcement, anti-terror
  - . . .
- **External forcing function**
  - congress,
  - OMB
  - GAO
  - . . .

*“Motivational push and pull.”*

# Current Technology Competence

- **Leader understands enough about the technology to manage**
- **Trusted contractors and advisors have enough understanding of technology to produce and monitor**
- **Contractors are fully competent and experienced in the technology in question—usually with commercial business background**

***“Switched on and recording...does not require both hands and a flashlight...”***

# NOT Business As Usual

- **JUST SAY NO . . .**
- **Contracting vehicles and management, RFP/ Source selection**
- **Contractor relationships and oversight**
- **Timelines and expectations (SHORTER, not linear)**
- **Standard costing approach (Costs are often in different places)**
- **Requirements and collaboration**
- **Etc.**

***“If you do what you always did, expect to get what you always got...”***

***“Doing the same thing over and over and expecting different results may be the definition of insanity...”***

# “Case Studies”

- **XXO (Architecture for integration of planning and utilization of ISR assets) 1998 (Failed)**
- **BC2A (DARPA project: Bosnia Command and Control Augmentation) 1996 (Succeeded)**
- **DoD Logistics (Supply chain management) 1998-2004 (Succeeded)**
- **“AISP” Automated information status portal (Ongoing, no operational results after 4+ years)**
- **Investigative Case Management 1 (Ongoing, future unknown)**
- **Investigative Case Management 2 (Ongoing, future in question)**

**SUCCESS (df): *New technology was successfully designed, deployed and utilized, with at least some of the desired result. DOES NOT mean “best,” “ideal,” “no problems.”***



# Scoring

- Informal scoring mechanism—observational and qualitative
- Provisional—proposal for further vetting

<b>Leadership</b>  <b>++ thru --</b>	<b>+, ++ for strong, knowledgeable leader</b> <b>0 for ordinary program management,</b> <b>-,-- for non-knowledgeable manager, doesn't share the vision, drives pathology into process</b>
<b>Topcover</b> <b>+, 0, -</b>	<b>+ for management topcover, civ, mil or appointed. Etc.</b> <b>- for management opposition</b>
<b>Necessity</b> <b>++, +, 0</b>	<b>+,++ identified strategic need (congress, other govt) or named on congressional "critical" watchlist</b> <b>+ identified tactical need, warfighter or support</b>
<b>Current Technical Competence</b> <b>++ thru --</b>	<b>+ program manager, support have current tech competence and experience</b> <b>+ contractors/vendors have current tech competence, experience</b> <b>-,-- program mgr, support lack and require 'poor' choices</b>
<b>No Business As Usual</b> <b>++ thru --</b>	<b>+ innovative contracting, collaboration mechanisms</b> <b>+ assertive, positive use of "any means necessary"</b> <b>-,-- use of poor practices, poor execution in BAU</b>

## XXO (1997-2000)

- Congress mandated the first official “Architecture” effort to get a handle on a class of information/sensor assets, so that they would be automated, integrated (TPED), and accessible.
- - Leadership vision, topcover—*none. Leadership mismatch, organizational mismatch, fractured effort.*
- ++ Necessity—*perceived critical need (tactical workarounds), funding threats if it wasn’t done, congressional mandate*
- + Current Technical Competence—*some. Proprietary contractor, program manager had OOP/OOD experience. Long development cycle in period of rapid technology change put both CTR and PM behind.*
- + Business as Usual—*original contracting was non-standard, and had success in early phases. Problems included basing project on closed, proprietary system.*

•RESULT: **Failed**

# BC2A

- DARPA project: Bosnia Command and Control Augmentation
  - Provided automated, anticipatory ISR to field commanders, utilizing leased fiberoptic lines, forward cacheing to servers, publish and subscribe, underlying SOA architecture capability. Effectiveness: 90% of requests from field commanders were already on server before they were requested. **Deployed in 3 mos.**
- 

**+++ Leadership vision and topcover—*visionary high-level congressional mandate, visionary AF Col. Leader, understood emerging commercial capabilities, authority and mandate***

**++ Necessity—*warfighter needs in Bosnia, no repeat of Desert Storm problems.***

**+++ Current technical competence—*Top-notch contractor support, SETA support and DARPA management***

**+++ No Business as Usual—*non-standard contracting (sole source, commercial leased lines, “pull out the stops”)***

**RESULT: SUCCESS – until it was turned over to DISA to go operational**

# DoD Logistics Modernization

- **Specific Army and Marine Corps Supply chain management efforts, overall efforts in Defense Logistics Agency. These efforts automated the supply chain management associated with military logistics and support. Typical reduction in time to receive parts and materials from >6 weeks to <48 hours; or 6 mos to 1 week. Used combination of EAI and SOA, plus modern commercial apps.**
- 

- + **Leadership vision and topcover—*good, probably not “heroic” leadership (no “fall on your sword”). Topcover associated with expectation of efficiencies, and reward for same.***
- ++ **Necessity—*critical to supporting the warfighter, directed under congressional mandates for automating government business***
- ++ **Current Technical Competence—*IT government professionals ran this, and used highly competent contractors with extensive commercial experience. (note: direct parallel with industry applications)***
- + **Business as Usual—*unknown contracting vehicles, uncommon strategic collaboration with contractors/consultants.***

**RESULT: SUCCESS**

# “AISP”

- **Automated Information Sharing Portal designed to share status of information requests, and potentially to deliver information via a web-based portal using a service oriented architecture approach to the back end.**
- 

- / + **Leadership vision and topcover—*lots of topcover, but highly political; leadership questionable in vision and priorities (multiple leaders seem concerned about advancement rather than mission/results).***
- + **Necessity—*significant and repeated demand for service, across multiple critical customers, DoD and government. Potentially extremely high-value, and high profile for govt seniors. Lots of resistance.***
- /+ **Current Technology Competence—*Lacking in government, apparently present in contractors.***
- +/- **Business as Usual—*Innovative contracting mechanisms, but traditional dysfunctional practices (milestones vs. capability, requirements runaway, over and under direction...and program office “cast of thousands” without CTC).***
- **RESULTS: Ongoing for 4+ years, no operational results.**

# Investigative Case Management System 1

- Effort to move from mainframe, manual and custom-coded systems to Service Oriented Architecture for speed, secure information sharing, automation to reduce cycle times and track progress, and modern data analysis, exchange and document management.
- 

- Leadership and topcover—*significant turnover in leadership over course of program, lack of defined focus*

+++ Necessity—*congressional mandate and operational demand for information sharing and performance improvement*

-- Current Technology Competence—*limited understanding in government about current technology; original contractor team (contractor potential) appears competent, but erosion of capabilities over course of original contract; long development cycle put CTR behind in current technology*

-- No Business as Usual—*Exceptional (bad) contracting practice, (business as usual for this organization), runaway requirements . . .*

**RESULT: FAILURE** (new effort TBD)

# Investigative Case Management System 2

- Effort to move from mainframe, client-server/ DB apps, manual and custom-coded systems to Service Oriented Architecture for speed, secure information sharing, automation to reduce cycle times and track progress, and modern data analysis, exchange and document management.

---

**+++ Leadership and topcover—*Senior government appointed officials and top-level leadership strongly aligned. Program manager committed to operational success.***

**+++ Necessity—*congressional mandate and deadline, and operational demand for information sharing and performance improvement.***

**++ Current Technology Competence—*Top leadership highly technology competent, local leadership mixed but willing to learn and take advice, core of highly competent advisors and (most) contractors.***

**+ No Business as Usual—*Competent administration and program management, strong engagement of Enterprise Architecture team for advice and recommendation (which is not Business as Usual)***

**RESULT: Ongoing, path to SUCCESS (potential issues with turnover of top leadership)**

# What are the conditions for successful Government implementation of modern IT to support operations?

- What efforts have been successful, to what extent?
- Where have these efforts happened?
- What conditions help it to happen?
- What actions that we can take help it to happen?